

# 7-5 MORTGAGE POINTS


ADVANCED FINANCIAL ALGEBRA

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# IS BUYING POINTS A WISE DECISION?

- Mortgage points are fees paid to your mortgage lender (usually the bank) to “buy down” (lower) your interest rate.
  - The usual cost is 1% per point.
  - It is important to do the math and compare the costs with and without the discount.
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# EXAMPLE 1 – POINTS COST

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- Elizabeth and Nicholas want to buy a new home in Sunset Park. They need to borrow \$350,000. Their bank offers an opportunity for the couple to buy down the quoted interest rate of 4.5% by 0.125% per point purchased. Each point will cost 1% of the amount borrowed. What will be the new interest rate if 2 points are purchased? What will be the cost to purchase 2 points?
- SOLUTION:
- Multiply to find the rate reduction: 0.125% per point purchased  $\longrightarrow$  2 points \* .125% = .25% reduction
- Subtract to find the new interest rate: 4.5%  $\longrightarrow$  original interest rate - .25% reduction = 4.25% new interest rate
- Each point costs 1% of the loan amount  $(.01) * \$350,000 = \$3,500$  cost per point
- Multiply to find the cost of 2 points:  $\$3,500 * 2 = \underline{\underline{\$7,000}}$  to drop the interest rate from 4.5 to 4.25%.

# EXAMPLE 2 – IS IT WORTH IT?

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- Should Elizabeth and Nicholas purchase those 2 points from Example #1?
- SOLUTION:
- Use the monthly payment formula to calculate the monthly payment with 4.5% and 4.25% rates.

$$M = \frac{\left(\frac{P}{12}\right)\left(1 + \frac{r}{12}\right)^{(12 \cdot t)}}{\left(1 + \frac{r}{12}\right)^{(12 \cdot t)} - 1} = \frac{(350,000)\left(\frac{.045}{12}\right)\left(1 + \frac{.045}{12}\right)^{(12 \cdot 15)}}{\left(1 + \frac{.045}{12}\right)^{(12 \cdot 15)} - 1} \approx \$2,677.48 \text{ per month at 4.5\% interest}$$

$$= \frac{(350,000)\left(\frac{.0425}{12}\right)\left(1 + \frac{.0425}{12}\right)^{(12 \cdot 15)}}{\left(1 + \frac{.0425}{12}\right)^{(12 \cdot 15)} - 1} \approx \$2,632.97 \text{ per month at 4.25\% interest}$$

- Compare the payments: \$2,677.48 (no points) - \$2,632.97 (2 points) = \$44.51 less per month
- BREAKEVEN POINT: \$7,000 cost / \$44.51 savings per month  $\approx$  157 or 158 months

# EXAMPLE 3 – HOW MUCH WOULD THEY SAVE?

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How much total would they save in Example #1 & 2 if they keep their house all 15 years?



SOLUTION:



Remember, the break even point was about 158 months. After that, they are saving money each month.



180 months in 15 years

- 158 month to break even

22 months of savings \* \$44.51 per month

They will save \$979.22 total if they keep the house.

# ASSIGNMENT: PG 435 # 3, 4, 7, 8, 9

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- #3

Rhonda wants to take out a 30-year, \$280,000 loan with a 4.4% APR. She is considering purchasing 2 points, which will decrease her APR by 0.125% per point. Each point will cost 1% of her loan. Compare her monthly payments with and without the purchase of the points.

Without points

With points

- #4

J.P. has been offered a 20-year, \$350,000 loan with a 3.9% APR. If he purchases 1 point, his APR will reduce to 3.7%. How much will his monthly payment savings be?

# ASSIGNMENT: PG 435 # 3, 4, 7, 8, 9 CON'T

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- #7

The bank offered Annette a \$380,000 30-year mortgage at 3.54%. She is deciding whether to purchase 2 points to reduce her APR by 0.25% per point. Each point will cost 1% of the loan value.

a. Calculate her monthly payments with the points.

b. Calculate her monthly payments without the points.

c. Determine the breakeven month.

- #8

The credit union offered Zach a \$200,000 10-year loan at a 3.625% APR. Should Zach purchase 1 point or no points? Each point lowers the APR by 0.125% and costs 1% of the loan amount.

# ASSIGNMENT: PG 435 # 3, 4, 7, 8, 9 CON'T

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- #9

Marina wants to take out a \$500,000 loan to purchase a new home. The bank offers a 25-year loan with an APR of 3.8%. If she purchases 1 point for 1% of the value of the loan, she will reduce her APR by 0.3%.

a. What is her monthly savings with the point purchase?

b. When will she break even?  (answer in months)

c. Assume she decided not to buy the point and put the cost into a certificate of deposit that pays 1.5% interest compounded monthly. Would this have been a better way to use the cost of the points?